

WHAT IS CLAIMED IS:

1. A pattern forming body comprising: a base material; a photocatalyst containing layer, comprising at least a photocatalyst, formed on the base material; a protecting part formed on the photocatalyst containing layer; a property variable layer, whose surface property is varied by a function of a photocatalyst due to an energy irradiation, formed so as to cover the photocatalyst containing layer and the protecting part; and a property-varied pattern which is a property varied property variable layer.

2. A color filter wherein the base material of the pattern forming body according to claim 1 is a transparent base material, the protecting part is a light shielding part, and a pixel part is formed according to the property-varied pattern.

3. The color filter according to claim 2, wherein the property variable layer is a wettability variable layer whose contact angle to a liquid is reduced by a function of a photocatalyst due to an energy irradiation.

4. The color filter according to claim 3, wherein the wettability variable layer is a layer containing an organo polysiloxane.

5. The color filter according to claim 4, wherein the organo

polysiloxane is an organo polysiloxane as a hydrolyzed condensate or a cohydrolyzed condensate of one kind or two or more kinds of silicon compounds represented by $Y_nSiX_{(4-n)}$ (Here, Y is an alkyl group, a fluoro alkyl group, a vinyl group, an amino group, a phenyl group, an epoxy group, or an organic group containing them, X is an alkoxy group, or a halogen, and n is an integer from 0 to 3.).

6. The color filter according to claim 5, wherein a carbon number of Y, which constitutes the organo polysiloxane, is in a range of 1 to 20.

7. The color filter according to claim 3, wherein the wettability variable layer is a monolayer.

8. The color filter according to claim 7, wherein the monolayer is formed from a silane compound comprising an organic chain.

9. The color filter according to claim 8, wherein a carbon number which constitutes the organic chain is in a range of 1 to 20.

10. The color filter according to claim 8, wherein the silane compound is a fluoroalkylsilane.

11. The color filter according to claim 2, wherein the

property variable layer is a decomposition removal layer which is decomposed and removed by an action of a photocatalyst due to an energy irradiation.

12. The color filter according to claim 11, wherein a contact angle of the decomposition removal layer to a liquid having a 40 mN/m surface tension is 50° or more, and a contact angle of the photocatalyst containing layer to a liquid having a 40 mN/m surface tension is 49° or less.

13. The color filter according to claim 11, wherein the decomposition removal layer is a monolayer.

14. The color filter according to claim 2, wherein the pixel part is formed by an ink jet method.

15. The color filter according to claim 14, wherein a curing type ink is used for the pixel part formed by an ink jet method.

16. The color filter according to claim 15, wherein the curing type ink is an UV curing ink.

17. The color filter according to claim 15, wherein the UV curing ink is a thermosetting ink.

18. The color filter according to claim 2, wherein the light shielding part is formed by a thermal transfer method.

19. The color filter according to claim 18, wherein an adhesion improving layer is formed on the photocatalyst containing layer.

20. The color filter according to claim 2 comprising an electrode layer on the pixel part.

21. A method for manufacturing a color filter comprising:
a photocatalyst containing layer forming process of forming a photocatalyst containing layer, comprising at least a photocatalyst, on a transparent base material;

a light shielding part forming process of forming a light shielding part on the photocatalyst containing layer;

a property variable layer forming process of forming a property variable layer, whose property is varied by a function of a photocatalyst due to an energy irradiation, so as to cover the photocatalyst containing layer and the light shielding part;

a property-varied pattern forming process of forming a property-varied pattern which is the property varied layer whose property is varied by irradiating the property variable layer with an energy; and

a pixel part forming process of forming a pixel part on the property-varied pattern.

22. The method for manufacturing a color filter according to claim 21, wherein the energy irradiation is carried out on

the entire surface from the property variable layer side.

23. The method for manufacturing a color filter according to claim 21, wherein the energy irradiation is carried out on the entire surface from the transparent base material side.

24. The method for manufacturing a color filter according to claim 21, wherein the energy irradiation is carried out via a photomask.

25. The method for manufacturing a color filter according to claim 21, wherein the property variable layer is a wettability variable layer whose contact angle to a liquid is reduced by a function of a photocatalyst due to an energy irradiation.

26. The method for manufacturing a color filter according to claim 21, wherein the property variable layer is a decomposition removal layer which is decomposed and removed by a function of a photocatalyst due to an energy irradiation.

27. The method for manufacturing a color filter according to claim 21, wherein the pixel part is formed by an ink jet method using a curing type ink.

28. The method for manufacturing a color filter according to claim 21, wherein the light shielding part forming process is carried out by a photolithography method.

29. The method for manufacturing a color filter according to claim 21, wherein the light shielding part forming process is carried out by a thermal transfer method.

30. The method for manufacturing a color filter according to claim 29 comprising an adhesion improving layer forming process, of forming an adhesion improving layer, after the photocatalyst containing layer forming process.

31. The method for manufacturing a color filter according to claim 29, wherein the photocatalyst containing layer formed in the photocatalyst containing layer forming process comprises an organo polysiloxane.

32. The method for manufacturing a color filter according to claim 29, wherein the photocatalyst containing layer formed in the photocatalyst containing layer forming process comprises a silane coupling agent, and

the silane coupling agent is an simple substance, a hydrolyzed condensate or a cohydrolyzed condensate of one kind or two or more kinds of silicon compounds represented by $Y_nSiX_{(4-n)}$ (Here, Y is an alkyl group, a fluoro alkyl group, a vinyl group, an amino group, a phenyl group, an epoxy group, or an organic group containing them, X is an alkoxy group, or a halogen, and n is an integer from 0 to 3.).

33. The method for manufacturing a color filter according to claim 30 comprising an energy irradiating process, of irradiating the photocatalyst containing layer with the energy, after the light shielding part forming process.